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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,696	09/29/2000	John A. Higgins	00SC033US7	1493

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EXAMINER

TAKAOKA, DEAN O

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/675,696

Applicant(s)

HIGGINS, JOHN A.

Examiner

Dean O Takaoka

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,31,32 and 48-52 is/are rejected.
- 7) ☒ Claim(s) 2-30 and 33-47 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 May 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 48, 49, 51 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanack (U.S. Patent No. 5,526,172).

Claims 48, 49 and 51:

Claim 48, 49 and 51 have not been amended and remain rejected for reasons of record contained in the office action dated January 7, 2003 (paper no. 4).

Claim 52:

Kanack shows a method of switching an electromagnetic beam (the method generic defined by the final product, thus the final product of Kanack inherently made by a method) comprising: transmitting the beam through a waveguide; and switching the walls of the waveguide between high surface impedance and low surface impedance states (tunable walls – Fig. 25a; where the closed state of the switch would inherently be a “high” impedance state and the open state would be a “low” impedance state) controls the propagation of the beam (e.g. inherent on or off, blocked or unblocked – col. 20, line 39 to col. 21, line 13) at different operating frequencies and polarizations (polarization inherent where the rectangular waveguide inherently has a plurality of polarizations, e.g. vertical and horizontal orthogonal polarizations; where tuning or

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adjusting is taught, col. 20 line 66 to col. 21, line 13; where the input signal is time varying col. 4, lines 62 to col. 5, line 2 and col. 5, line 64 to col. 6, line 8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford in view of Kanack.

Claim 1:

Stafford (Figs. 1 – 5) shows a shutter switch for an electromagnetic wave beam (abstract, spec all where Stafford discloses parallel rays of radiation, radiation inherently electromagnetic, further where the preferred embodiment is used in a magneto-optic modulator – col. 1, line 61) comprising a plurality of waveguides (92 – Fig. 3) adapted to receive at least part of an electromagnetic beam, the waveguide being adjacent to one another (adjacent optic fibers 92 shown in Fig. 3) with their longitudinal axes aligned with the propagation of the beam; the waveguides switchable to either transmit or block transmission of the respective portion of the beam (col. 4, lines 33 – 53 where switches 93, block radiation of the optical fiber 92 or are selectively opened to allow spectrum analysis) but does not show the waveguide having sidewalls with alterable impedance properties, the waveguide switchable to alter the impedance properties of its sidewalls.

Kanack (best shown in Fig. 25a with respect to Fig. 18) shows a similar shutter switch for an electromagnetic wave beam (where Kanack shows a spatial light modulator or SLM) with the waveguide having sidewalls with alterable impedance properties, the waveguide switchable to alter the impedance properties of its sidewalls (col. 20, line 65 to col. 21, line 13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shutter switch disclosed by Stafford with the adjustable waveguide sidewalls disclosed by Kanack. Such a modification would have realized the advantageous benefit of providing impedance adjustability and performance with other topologies over a wide or nearly infinite ranges (col. 23, lines 5-7; Kanack); further in that both Stafford and Kanack show spatial light modulators or SLM's which would further suggest a mere substitution of well-known art-recognized equivalent devices thus suggesting the obviousness of the modification.

Claim 31:

A millimeter beam transmission system (obvious in that a optical signal is transmitted, the optical signal obviously being defined as/in millimeter wavelengths) comprising; an electromagnetic beam transmitter (the electronic beam discussed in the reasons for rejection of claim 1 above and the transmitter obviously as source for the transmitted waves thru slit 60 shown in Fig. 3, further exemplified as the source shown in Fig. 4 and 5); an electromagnetic beam receiver (detector 100 – Fig. 3); a shutter switch (shutter switch 93) positioned in the path of the beam between the transmitter and receiver, the shutter switch comprising at least one waveguide positioned to receive

at least part of the beam, the longitudinal axis of each of the waveguides aligned with the propagation of the beam (the longitudinal axis of waveguides 92 shown aligned with the propagation of the beam – Fig. 3), each of the waveguide being switchable to either transmit or block transmission of its respective portion of the beam (the transmission or blocking of the electronic beam discussed in the reasons for rejection of claim 1 above).

Claim 32:

A radiating element for generating a electromagnetic millimeter signal and a first lens (42) positioned to collimate at least a part of the millimeter signal into a beam, and a receive receiver comprises a electromagnetic receiving element and a second lens (48) positioned to focus the beam to the receiving element, the shutter switch positioned between the first and second lenses (SLM 46 – Fig. 2 including shutter switch 93 – Fig. 3).

Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanack.

Claim 50 has not been amended and remains rejected for reasons of record contained in the office action dated January 7, 2003 (paper no. 4).

Response to Arguments

Applicant's arguments with respect to claims 1, 31 and 32 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed May 8, 2003 (paper no. 6) with respect to claims 48, 49 and 51 have been fully considered but they are not persuasive.

Claims 48, 49 and 51:

With respect to the prior art of Kanack (e.g. Fig. 25a), it is asserted that "*Kanack does not disclose, teach or suggest a waveguide with walls switchable between high impedance and conductive states*" to which the Examiner disagrees.

With respect to the office action of record contained in the office action dated January 7, 2003 (paper no. 4), Fig. 25a clearly shows a waveguide 242 comprising switch 80 in which switch 80 further comprises a plurality of deflectable members 88. The functionality of switch 80 comprising deflectable members 88 is disclosed with respect to Fig. 18 in which the open state of the switch would inherently be a "high impedance" and where the closed position would be a conductive state, thus blocking or unblocking the optical path, col. 20, line 39 to col. 21 line 13, as noted in the previous office action, thus the rejections of the claims are maintained by the Examiner.

Allowable Subject Matter

Claims 2 – 30 and 33 – 47 are allowed.

The reasons of allowable subject matter remains the same discussed in the previous office action dated January 7, 2003 (paper no. 4).

Conclusion

All specification and drawing objections contained in the previous office action dated January 7, 2003 (paper no. 4) are withdrawn in view of Applicant's amendment dated May 8, 2003 (paper no. 6).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

dot
July 7, 2003



Robert Pascal
Supervisory Patent Examiner
Technology Center 2817